

Claims

- [c1] 1.A method for fabricating a fluid injection head structure comprising steps of:
providing a substrate;
forming at least one bubble generator on the substrate;
forming at least one functional device;
forming a first conductive trace, which is composed of the poly-silicon layer; and
forming a second conductive trace, which is used to electrically couple the functional device with the bubble generator, and also serves to couple the functional device with the first conductive trace.
- [c2] 2.The method of claim 1 wherein the method further comprises forming a contact layer positioned between the first conductive trace and the second conductive trace to electrically couple the first conductive trace with the second conductive trace.
- [c3] 3.The method of claim 1 wherein the second conductive trace comprises a pad.
- [c4] 4.The method of claim 1 wherein the method further comprises a step of forming a dielectric layer between

the first conductive trace and the second conductive trace.

- [c5] 5.The method of claim 1 wherein the functional device is a transistor comprising a source, a drain and a gate.
- [c6] 6.The method of claim 5 wherein the transistor is a metal oxide semiconductor field effect transistor (MOSFET) and the gate is composed of a poly-silicon layer.
- [c7] 7.The method of claim 1 wherein the gate and the first conductive trace are formed in a same photo-etchingprocess (PEP).
- [c8] 8.The method of claim 1 wherein the material of the second conductive trace is any one of aluminum, gold, copper, tungsten, alloys of aluminum-silicon-copper, and alloys of aluminum-copper.
- [c9] 9.The method of claim 1 wherein the bubble generator comprises a first bubble generating device and a second bubble generating device positioned adjacent to a corresponding orifice on a corresponding chamber, wherein when the chamber is full of fluid, the first bubble generating device generates a first bubble, and then the second bubble generating device generates a second bubble to eject the fluid from the chamber through the orifice.

[c10] 10. The method of claim 9 wherein the first bubble serves as a virtual valve, restricts flow of fluid out of the chamber.

[c11] 11.The method of claim 1 wherein the method further comprises the steps of:
forming a dielectric layer on the substrate;
etching the substrate and the dielectric layer to form a manifold and at least one chamber connected to the manifold such that fluid can flow through the manifold to the chamber; and
forming at least one orifice positioned adjacent to the corresponding bubble generator, which is connected to the chamber for ejecting the fluid.

[c12] 12.The method of claim 11 wherein the method further comprises a step of:
forming a low stress layer, wherein the bubble generator is formed on the low stress layer.

[c13] 13.The method of claim 11 wherein the injection head is used as a print head of an inkjet printer, the manifold is connected to an ink cartridge, and the fluid is the ink of ink cartridge.